VOLUME CONTENTS

SUÁREZ-QUIAN, CARLOS A., and BYERS, STEPHEN. Redistribution of epidermal growth factor receptor as a function of cell density, cell-cell adhesion and calcium in human (A-431) cells 1
RØMERT, P., QUISTORFF, B., and BEHNKE, O. Histological evaluation of the zonation of colloidal gold uptake by the rat liver 19
VOGL, A. WAYNE, and PFEIFFER, DAVID C. Filamentous actin detected in rat spermatozoa 33
ANDERSON, EVERETT, and LEE, GLORIA Y. The participation of growth factors in simulating the quiescent, proliferative, and differentiative stages of rat granulosa cells grown in a serum-free medium 49
FULLWOOD, NIGEL J., TROILO, DAVID, WALLMAN, JOSH, and MEEK, KEITH M. Synchrotron X-ray diffraction and histochemical studies of normal and myopic chick eyes 73
DENÈFLE, J. P., ZHU Q. L., and LECHAIRE, J. P. Localization of fibronectin in the frog skin 87
PRINCE, J. S., KOHEN, C., KOHEN, E., JIMENEZ, J., and BRADA, Z. Direct connection between myelinosomes, endoplasmic reticulum and nuclear envelope in mouse hepatocytes grown with the amphiphilic drug, quinacrine 103
SCHMITZ, HOLGER, ASHTON, FRANCIS T., PEPE, FRANK A., and BEINBRECH, GERNOT. Invertebrate myosin filament: parallel subfilament arrangement in the wall of solid filaments from the honeybee, *Apis mellifica* 111
KLAG, JERZY, and BILIŃSKI, SZCZEPAN. Oosome formation in two ichneumonid wasps 121
ANTOLÍN-GONZÁLEZ, ISAAC, URÍA, HIGINIO, TOLIVIA, DELIO, and MENÉNDEZ-PELÁEZ, ARMANDO. The harderian gland of the rodent *Octodon degus*: a structural and ultrastructural study 129
PRUSH, ROBERT D., and ROSCOE, J. CLAYTON. A possible signal-coupling role for cyclic AMP during endocytosis in *Amoeba proteus* 141
MEYER-ROCHOW, V. B., and REID, W. A. Cephalic structures in the nemertine *Parborlasia corrugatus* – are they really eyes? 151
EVANS, MICHAEL J., COX, ROBERT A., ZHU, QINGYAN, BURKE, ANN S., and MOLLER, PETER C. Organization of cytokeratin intermediate filaments in basal cells of growing rat trachea 159
CASTAÑO, JUSTO-P., RUIZ-NAVARRO, ANTONIO, TORRONTERAS, RAFAEL, MALAGÓN, MARÍA-M., and GRACIA-NAVARRO, FRANCISCO. Different exocytotic morphology in amphibian prolactin and growth hormone cells stimulated *in vitro* with TRH 165
MCCLUSKEY, JANE, HOPKINSON-WOOLLEY, JAMES, LUKE, BARBARA, and MARTIN, PAUL. A study of wound healing in the E11.5 mouse embryo by light and electron microscopy 173
PAILLARD, C., and LE PENNEC, M. Ultrastructural studies of the mantle and the periostracal lamina in the manila clam, *Ruditapes philippinarum* 183
BELLÉS, X., CASSIER, P., CERDÁ, X., PASCUAL, N., ANDRÉ M., ROSSO, Y., and PIULACHS, M. D. Induction of choriogenesis by 20-hydroxyecdysone in the German cockroach 195
ANTWERPEN, RIK VAN, CONWAY, RICHARD, and LAW, JOHN H. Protein and lipoprotein uptake by developing oocytes of the hawkmoth *Manduca sexta*. An ultrastructural and immunocytochemical study 205
QUENNEDEY, ANDRÉ, and QUENNEDEY, BRIGITTE. The precocious commitment of wing anlagen in *Tenebrio molitor* revealed by the addition of 20-hydroxyecdysone 219
KERSCHBAUM, HUBERT H., HOLZINGER, KARIN, and HERMANN, ANTON. Endocrine-like cells and insulin-binding sites in the epineurium of *Helix pomatia* 237
JOPLIN, KARL H., STETSON, DAVID L., DIAZ, JOSE G., and DENLINGER, DAVID L. Cellular differences in ring glands of flesh fly pupae as a consequence of diapause programming 245

KOCH, E. A., SPITZER, R. H., PITHAWALLA, R. B., CASTILLOS III, F. A., and WILSON, L. J. The hagfish oocyte at late stages of oogenesis: structural and metabolic events at the micropylar region 259
SASAKI, KATSUNORI, and ICHIKAWA, MISAO. The dynamics of intramembranous particles in the degradative pathways of the phagocytosed erythrocyte 275
JEUN, GWENDOLYN, and LOCKE, MICHAEL. The planes of division in twin cell doublets 289
JEUN, GWENDOLYN, and LOCKE, MICHAEL. The timing of division in twin cell doublets 295
NISHIZONO, HISANORI, MURATA, YOSHIO, TANAKA, MITSURU, SOJI, TSUYOSHI, and HERBERT, DAMON C. Evidence that Müller cells can phagocytize egg-lecithin-coated silicone particles 305
FALUGI, CARLA, and DAVOLI, CAMILLA. Localization of putative biochemical messengers during *Eisenia foetida* (Annelida, Oligochaeta) development 311
MATSUNO, AKIRA, ISHIDA, HIDEKI, and HORI, HIDEKI. Two kinds of thick filament in smooth muscle cells in the adductor of a clam, *Chlamys nobilis* 325
GAINO, ELDA, MAGNINO, GIUSEPPE, BURLANDO, BRUNO, and SARA, MICHELE. Morphological responses of dissociated sponge cells to different organic substrata 333
CORNELISSEN, M., THIERENS, H., and de RIDDER, L. Radiation effects on the matrix synthesis in non-ossifying embryonic cartilage *in vitro*: a functional and morphological study 343
TAKAHASHI, KIYOSHI, and NAITO, MAKOTO. Development, differentiation, and proliferation of macrophages in the rat yolk sac 351
BLEVE-ZACHEO, TERESA, MELILLO, M. TERESA, and ZACHEO, GIUSEPPE. Ultrastructural studies on the nematode *Xiphinema diversicaudatum*: egg shell formation 363
BLEVE-ZACHEO, TERESA, MELILLO, M. TERESA, and ZACHEO, GIUSEPPE. Ultrastructural studies on the nematode *Xiphinema diversicaudatum*: oogenesis and fertilization 375
BIANCHI, FRANCESCO, GIANNESSI, FRANCESCO, DOLFI, AMELIO, and LUPETTI, MARIO. Properties of the esophageal epithelium in relation to organizative patterns of lymphoid infiltrations in the red-eared turtle 389
MCPHERSON, S. M. G., and HUEBNER, E. Dynamics of the oocyte cortical cytoskeleton during oogenesis in *Rhodnius prolixus* 399
KYRIAKIDES, T. R., BEDOYAN, J. K., PATIL, C. S., and SPENCE, K. D. *In vivo* distribution of immune protein scolexin in bacteria-injected *Manduca sexta* larvae 423
VOLKMANN, ARMIN, and GREVEN, HARTMUT. Ultrastructural localization of tyrosinase in the tardigrade cuticle 435
BÁO, SÔNIA N., and HAMÚ, CLARICE. Nuclear changes during spermiogenesis in two chrysomelid beetles 439
STEINER, CORNELIA, and KEIL, THOMAS A. Morphogenesis of the antenna of the male silkmoth, *Antheraea polyphemus*. IV. Segmentation and branch formation 447
LAU, CHUNG L. Behavior of embryonic chick heart cells in culture 1. Cellular responses to insulin-transferrin-selenium 465
WILLIAMS, J. B. Nature, origin and fates of membranous lamellae in the lung of the neonate rat 481
WEST, SANDRA H., and BASSETT, JACK R. Diurnal variation in adrenal gland freshweight due to vascular damming: a possible role in corticosterone storage 495
VALVERDE, E., DÍAZ DE RADA, O., BURRELL, M. A., ROVIRA, J., and SESMA, P. Immunocytochemical and ultrastructural characterization of endocrine cells and nerves in the intestine of *Rana temporaria* 505
AZEVEDO, R. B. de, and BETTI, F. Increase of the bursal follicular medullary compartment in chicks intracloacally inoculated with *Bordetella pertussis* 517
ADAMIEC-BEYGA, EWA, KARKARE, SUJATA, KELLY, THOMAS R., and GILLOTEAUX, JACQUES. Cytometric study of the female Syrian hamster gallbladder epithelium following sex steroid administration 527
HENRY, MONIQUE, BENLIMAME, NACIBA, BOUCAUD-CAMOU, EVE, MATHIEU,

MICHEL, DONVAL, ANNE, and VAN WORMHOUDT, ALAIN. The amylase-secreting cells of the stomach of the scallop, *Pecten maximus*: ultrastructural, immunohistochemical and immunocytochemical characterizations 537
CUADRADO, M. ISABEL, COVEÑAS, RAFAEL, and TRAMU, GÉRARD. Neuropeptides and monoamines in the carp (*Cyprinus carpio*) pretectum: an immunocytochemical study 549
KERSCHBAUM, HUBERT H., SONNLEITNER-WITTAUER, URSULA, HACKER, GERHARD W., and HERMANN, ANTON. NPY- and C-PON-immunoreactive substances in the central nervous system of *Helix pomatia* 563
KEIL, THOMAS A. Dynamics of 'immotile' olfactory cilia in the silkmoth *Antheraea* 573
KURABUCHI, S. Fine structure of nuptial pad surface of male ranid frogs 589
RINTERKNECHT, E. The fine structure of the eggshell of the laid egg of *Locusta migratoria migratorioides* 599
RINTERKNECHT, E. A fine structural analysis of serosal cuticulogenesis in the egg of *Locusta migratoria migratorioides* 611
KIKUCHI, SUSUMU, and MATSUMASA, MASATOSHI. The osmoregulatory tissue around the afferent blood vessels of the coxal gills in the estuarine amphipods, *Grandidierella japonica* and *Melita satifragella* 627
EVANS, MICHAEL J., BURKE, ANN S., COX, ROBERT A., ZHU, QINGYAN, and MOLLER, PETER C. *In situ* preparation of rat tracheal basal cells 639
STRUM, JUDY M., DESANTI, ANDREA M., and MCDOWELL, ELIZABETH M. Patterns of cellular proliferation and airway branching in cultured fetal hamster lung explants 645
DÍAZ-REGUEIRA, SOFÍA M., ALVAREZ-OTERO, ROSA, and ANADÓN, RAMÓN. An immunocytochemical and ultrastructural study of a specialized glial region of the medulla oblongata of the adult and juvenile grey mullet 657
MIKI, HIROSHI, UNNO, KAZUTOSHI, PARK, PYOYUN, OHNO, TOHGO, and NAKAJIMA, MITSUO. Morphogenesis and origin of fibrous long-spacing collagen fibers in collagenase-treated mouse skin tissues 669
LAU, CHUNG L. Behavior of embryonic chick heart cells in culture 2. Cellular responses to Epidermal Growth Factor and other growth signals 681
ROVIRA, J., VILLARO, A. C., BODEGAS, M. E., VALVERDE, E., and SESMA, P. Structural study of the frog *Rana temporaria* larval stomach 695
ZENG, WEI, and LOCKE, MICHAEL. The persistence of Golgi complexes during cell division in an insect epidermis 709
OHTA, T., KATO, K. H., ABE, T., and TAKEUCHI, T. Sperm morphology and distribution of intramembranous particles in the sperm heads of selected freshwater teleosts 725
HINSCH, GERTRUDE W. Ultrastructure of spermatogonia, spermatocytes, and Sertoli cells in the testis of the crayfish, *Procambarus paeninsulanus* 737
HINSCH, GERTRUDE W. The role of Sertoli cells in spermatid maturation in the testis of the crayfish, *Procambarus paeninsulanus* 743
RIPARBELLI, MARIA GIOVANNA, CALLAINI, GIUILIANO, and DALLAI, ROMANO. Spatial organization of microtubules and microfilaments in larval and adult salivary glands of *Drosophila melanogaster* 751
LIANG, D., and SCHAL, C. Ultrastructure and maturation of a sex pheromone gland in the female German cockroach, *Blattella germanica* 763
FALLENI, ALESSANDRA. Ultrastructure of growing oocytes and accessory cells in Austrognathia (Gnathostomulida, Bursovaginoidea) 777
INOUE, MIKI, YAMADA, JUNZO, KITAMURA, NOBUO, SHIMAZAKI, KEI-ICHI, ANDRÉN, ANDERS, and YAMASHITA, TADAYUKI. Immunohistochemical localization of lactoferrin in bovine exocrine glands 791
TALHOUK, RABIH S., NEISWANDER, RONALD L., and SCHANBACHER, FLOYD L. Morphological and functional differentiation of cryopreserved lactating bovine mammary cells cultured on floating collagen gels 799

BIANCHI, F., BERNARDINI, N., MARCHETTI, P., NAVALESI, R., GIANNARELLI, R., DOLFI, A., and LUPETTI, M. *In vitro* morpho-functional analysis of pancreatic islets isolated from the domestic chicken 817

SUGIMOTO, KEIJI, FUJII, SACHIKO, SAGO, HARUHIKO, YOSHIDA, KAZUMI, TAKEMASA, TOHRU, and YAMASHITA, KAZUO. Role of marginal stress fibers formed in the rat vascular endothelial cells 825

DIGLIO, CLEMENT A., LIU, WEIQUN, GRAMMAS, PAULA, GIACOMELLI, FILIBERTO, and WIENER, JOSEPH. Isolation and characterization of cerebral resistance vessel endothelium in culture 833

RIZZO, VICTOR, and DEFOUW, DAVID O. Macromolecular selectivity of chick chorio-allantoic membrane microvessels during normal angiogenesis and endothelial differentiation 847

MUKHTAR, D. D. Y., and STEWART, I. J. Observations of the cellular changes in cultured mouse metrial gland explants and of the maintenance of granulated metrial gland cells *in vitro* 857

FALCÓN, VIVIANA, BARANOSKY, NIURKA, CASTRO, FIDEL O., MONTERO, CARLOS, GONZÁLEZ, MARISEL, HAYES, ORLANDO, ANCHETA, ODELSA, GRA, BIENVENIDO, and MANDADO, SARA. Ultrastructural and immunocytochemical characteristics of hepatocytes from hepatitis B virus infected chimpanzees 865

NASIRUDDIN, M., and MORDUE (LUNTZ), A. J. The effect of azadirachtin on the midgut histology of the locusts, *Schistocerca gregaria* and *Locusta migratoria* 875

ANTWERPEN, RIK VAN, and LAW, JOHN H. Immunocytochemical localization of a follicle specific protein of the hawkmoth *Manduca sexta* 885

LAPIED, B., TRIBUT, F., SINAKEVITCH, I., HUE, B., and BEADLE, D. J. Neurite regeneration of long-term cultured adult insect neurosecretory cells identified as dum neurons 893

DALLAI, R., and AFZELIUS, B. A. Characteristics of the sperm tail of the velvet worm, *Euperipatoides leuckarti* (Onychophora) 907

KIKUCHI, SUSUMU, MATSUMASA, MASATOSHI, and YASHIMA, YOICHI. The ultrastructure of the sternal gills forming a striking contrast with the coxal gills in a fresh-water amphipod (Crustacea) 915

PAPASSIDERI, ISSIDORA S., MARGARITIS, LUKAS H., and GULIK-KRZYWICKI, TADEUSZ. The eggshell of *Drosophila melanogaster* VIII. Morphogenesis of the wax layer during oogenesis 929

PADILLA, C. ALICIA, MARTÍNEZ-GALISTEO, EMILIA, and BÁRCENA, J. ANTONIO. Topological relationships between porcine anterior pituitary hormones and the thioredoxin and glutaredoxin systems 937

INDEX OF AUTHORS 947

INDEX OF SUBJECTS 955